

IN THE CLAIMS:

1. A method of melt spinning a group of multifilament yarns from a heated polymer melt comprising
5 the steps of

extruding the melt through a plurality of nozzles arranged in a linear arrangement so as to define a plurality of linearly arranged downwardly advancing groups of filaments, and

10 withdrawing the groups of filaments from the nozzles so that the groups of filaments advance

a) through a precooling zone wherein the filaments are cooled without significant solidification, and then

15 b) through an aftercooling zone wherein the filaments are further cooled by the action of a coolant flow which is directed into the path of the groups in such a manner that the filaments solidify in a solidification range within the aftercooling
20 zone, with the coolant flow having a predetermined flow velocity for influencing the tension imparted to the filaments.

2. The method of claim 1, wherein the coolant flow
25 is accelerated in an acceleration zone within the aftercooling zone to the predetermined flow velocity, and the solidification range of the filaments extends within the acceleration zone of the aftercooling zone or immediately downstream thereof.

30 3. The method of claim 2, wherein the flow velocity of the coolant flow upstream of the solidification range of the filaments is substantially equal to or greater than the advancing speed of the filaments.

4. The method of claim 1, wherein the cooling of the filaments within the precooling zone is achieved by a coolant which is controlled such that the position of the solidification range of the filaments within the aftercooling zone is maintained in a predetermined desired range of the aftercooling zone.

5. The method of claim 4, wherein the temperature of the coolant is controlled before entering the precooling zone.

6. The method of claim 5, wherein the volume flow of the coolant is controlled before entering the precooling zone.

7. The method of claim 1, wherein the coolant flow in the aftercooling zone is generated by a suction effect.

8. The method of claim 1, wherein the coolant flow in the aftercooling zone is generated by a blowing effect.

9. The method of claim 1, wherein the coolant flow in the aftercooling zone is generated at least in part from a coolant leaving the precooling zone.

10. The method of claim 1, wherein the coolant flow is generated from a coolant leaving the precooling zone and from a coolant supplied downstream of the precooling zone.

11. The method of claim 1, wherein in the precooling zone a coolant is supplied to the filaments by a suction effect or by a blowing effect.

5 12. The method of Claim 1, wherein each group of filaments is gathered to a yarn which is laid to form a spun-bonded nonwoven yarn after the solidification of the filaments.

10 13. The method of Claim 1, wherein the groups of filaments are gathered to a tow after the solidification of the filaments, and then deposited in a can, or cut and pressed into a bale.

15 14. The method of Claims 1, wherein after the solidification of the filaments the groups of filaments are gathered into a plurality of individual yarns and wound to packages.

20 15. The method of Claim 1, wherein the polymer melt is selected from the group consisting of polyester, polyamide, or polypropylene.